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Claims

1. A method for presenting liquid samples for mass spectrometry comprising:

obtaining a sample presentation device configured to enable fluid communication from a microwell to at least one intermediate electro-wettable site and then to a terminal electro-wettable site,

delivering a volume of a liquid sample containing analytes to the microwell, and

directing the liquid sample from the microwell to the terminal electro-wettable site via the intermediate electro-wettable site by altering the wettability of the intermediate electro-wettable site and the terminal electro-wettable site in order to deposit the analytes on the terminal electro-wettable site.

2. The method of claim 1, wherein the wettability of each electro-wettable site is altered by selective electrical actuation of each electro-wettable site.

3. The method of claim 1, wherein the volume of the liquid sample is reduced as it is directed from the microwell to the terminal electro-wettable site.

4. The method of claim 1, wherein the volume of the liquid sample is sequentially reduced at each electro-wettable site by evaporation as the liquid sample is directed from the microwell to the terminal electro-wettable site.

5. The method of claim 1, wherein the volume of the liquid sample is sequentially reduced at each electro-wettable site by evaporation under ambient conditions as the liquid sample is directed from the microwell to the terminal electro-wettable site.

6. The method of claim 1, wherein the volume of the liquid sample is sequentially reduced via evaporation at each electro-wettable site by heating the liquid sample as the liquid sample is directed from the microwell to the terminal electro-wettable site.

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7. The method of claim 1, wherein the terminal electro-wettable site is adapted to confine the deposition of analytes to within a predetermined area.

8. The method of claim 1, wherein the sample presentation device comprises a plurality of a sample presentation sites and wherein the liquid sample is delivered to each sample presentation site via liquid handling robots.

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9. A device for presenting liquid samples for mass spectrometry comprising:

a microwell adapted to receive a volume of a liquid sample containing analytes,

at least one intermediate electro-wettable site contiguous with a portion of the microwell,

a terminal electro-wettable site, and

wherein the intermediate electro-wettable site is positioned between the microwell and the terminal electro-wettable site, and

wherein the surface tension of the at least one intermediate electro-wettable site and surface tension of the terminal electro-wettable site are variably alterable to direct the movement of the liquid sample from the microwell to the terminal electro-wettable site via the at least one intermediate electro-wettable site for deposition of the analytes on the terminal electro-wettable site.

10. The device of claim 10, wherein the intermediary electro-wettable site has surface area which is greater than the surface area of the terminal electro-wettable site.

11. The device of claim 10, wherein a fluid path is defined by the microwell, the intermediary electro-wettable site and the terminal electro-wettable site, and wherein each successive site has a surface area which is equal to or less than that of the preceding electro-wettable site.

12. The device of claim 10, wherein each intermediary electro-wettable site between the microwell and the terminal electro-wettable site has surface area which is about half of the surface area of an adjacent intermediary terminal electro-wettable site and wherein the terminal electro-wettable site has surface area which is about half of the surface area of an adjacent intermediary terminal electro-wettable site.

13. The device of claim 10, wherein the microwell is adapted to contain the liquid sample.

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14. The device of claim 10, wherein the microwell is adapted to contain the liquid sample by actuation of an electro-wettable zone.

15. The device of claim 10, wherein the microwell is adapted to contain the liquid sample via by a patterned zone exhibiting lower surface tension than a surrounding area.

16. The device of claim 10, wherein the microwell comprises an electro-wettable zone.

17. The device of claim 10, wherein the microwell comprises a chemically-modified zone.

18. The device of claim 10, wherein the microwell comprises a zone which exhibits hydrophobic and non-adsorptive properties with respect to the analytes.

19. The device of claim 10, wherein the microwell comprises a zone which exhibits hydrophobic and adsorptive properties with respect to analytes.

20. The device of claim 10, wherein the microwell and the intermediate electro-wettable site are shaped to enable the liquid sample to simultaneously contact the microwell and the intermediate electro-wettable site.

21. The device of claim 10, wherein the electro-wettable sites are at least partially nested.

22. The device of claim 10, wherein the electro-wettable sites are elliptically shaped.

23. The device of claim 10, wherein the device is a laminate comprising a non-conducting substrate.